

PREPRUFE® 275 Membrane

Blindside waterproofing membrane for shotcrete foundation walls

Product Description

GCP Applied Technologies (“GCP”) PREPRUFE®275 membrane is a composite sheet comprised of an HDPE film, an aggressive pressure sensitive adhesive and a weather resistant protective coating. Using patented Advanced Bond Technology™, PREPRUFE®275 membrane provides a continuous seal to concrete cast against it resisting water ingress and migration between the membrane and the structure.

Product Advantages

- Durable system designed specifically to withstand the force of shotcrete placement.
- The unique continuous and integral bond to the structure, is specifically designed to reduce lateral water migration between the membrane and the shotcrete.
- Designed with fully adhered adhesive to adhesive watertight ZipLap™ seams and easy to execute detailing.
- Provides a barrier to water, moisture and soil gases physically isolating the structure from the surrounding substrate.
- Release liner free, expedites installation and reduces construction site waste.
- Solar reflective surface results in reduced temperature gain.
- Simple and quick to install requiring no priming.
- Can be applied to permanent formwork – allows maximum use of confined sites.
- Installed membrane is unaffected by wet jobsite conditions – Jobsite water will not cause premature activation
- Waterproofing is not reliant on confining pressures or hydration
- Installed membrane unaffected by freeze/thaw, wet/dry cycling
- Chemical resistance – protects structure from salt or sulphate attack effective in most types of soils and waters

Product Applications

Applications include construction such as garages, plant rooms and utility grade basements. PREPRUFE® 275 membrane is designed for shotcrete walls with intermittent water and low or no hydrostatic condition. To provide long-term waterproofing performance in high-risk, hydrostatic and critical shotcrete conditions, PREPRUFE®SCS blindside waterproofing system is recommended. Complete product information and Product Data Sheet for PREPRUFE®SCS blindside waterproofing system can be found at gcpat.com

System Components:

Membrane

PREPRUFE®275 — waterproofing membrane optimized for shotcrete foundation walls (vertical use only)

PREPRUFE®275 membrane is applied vertically to timber lagging or other soil retention systems. Shotcrete is then placed directly against the adhesive side of the membrane.

Ancillary Components (refer to the most current Data Sheets for all system components available on gcpat.com)

- PREPRUFE® Tape LT – low temperature tape for covering cut edges, roll ends, penetrations and detailing in cold weather
- PREPRUFE® Tape HC – high temperature tape for covering cut edges, roll ends, penetrations and detailing at elevated temperatures
- PREPRUFE® CJ Tape LT — low temperature joint tape for construction joints, and detailing in cold weather
- PREPRUFE® CJ Tape HC — high temperature joint tape for construction joints, and detailing in hot weather
- BITUTHENE® Liquid Membrane — for sealing around penetrations, etc.
- ADCOR® — waterstop for joints in concrete walls and floors
- PREPRUFE® Tieback Covers — preformed cover for soil retention wall tieback heads

Limitations of Use

- Approved uses include only those specifically detailed in this Product Data Sheet and other current Product Data Sheets that can be found at gcpat.com
- PREPRUFE® 275 membranes are not intended for any other use. Contact GCP Technical Services where any other use is anticipated or intended.
- PREPRUFE® 275 membranes are designed for in-service temperatures below 120 °F (49 °C)
- For hydrostatic and critical waterproofing applications consider PREPRUFE® SCS blindside waterproofing system. See separate data sheet at gcpat.com

Safety and Handling

Users must read and understand the product label and Safety Data Sheets (SDS's) for each system component before use. All users should acquaint themselves with this information prior to working with the material. Carefully read detailed precaution statements on the product labels and SDS's before use. The most current SDS's can be obtained from our web site at gcpat.com or by contacting GCP toll free at 1-866-333-3SBM (3726).

Storage

- Observe 1 year shelf life and use on a first in first out basis
- Store in dry conditions between 40°F (4.5°C)-90°F (32°C)
- Store off ground under tarps or otherwise protected from rain and ground moisture
- See TL-0030 - Shelf Life/Storage and Handling of GCP Applied Technologies Waterproofing and Air Barrier Products Technical Letter

Installation

Technical Support, Details and Technical Letters

The most up to date detail drawings and technical letters are available at gcpat.com. For complete application instructions, please refer to the current GCP Applied Technologies Contractor Handbook and Literature on (www.gcpat.com). Documents in hardcopy as well as information found on websites other than www.gcpat.com may be out of date or in error. Before using this product it is important that information be confirmed by accessing www.gcpat.com and reviewing the most recent product information, including without limitation Product Data Sheets and Contractor Manuals, Technical Bulletins, Detail Drawings and detailing recommendations. Please review all materials prior to installation of PREPRUFE®275 membrane.

Support is also available by full-time technically trained GCP Applied Technologies field sales representatives and technical service personnel, backed by a central research and development technical services staff. For technical assistance with detailing and problem solving please call toll-free at (866) 333-3SBM (3726).

Temperature Requirements

- PREPRUFE® 275 membranes can be applied at temperatures of 25°F (-4°C) or above. When installing PREPRUFE® 275 membranes in cold or marginal weather conditions <40°F (<4°C) the use of PREPRUFE® Tape LT is required at all laps and detailing. All surfaces to receive PREPRUFE® Tape LT must be clean and dry and the release liner must be removed immediately after application.
- PREPRUFE® 275 membranes are designed for in-service temperatures below 120°F (49°C)

Substrate Preparation

All surfaces—It is essential to create a sound and solid substrate to eliminate movement during the shotcrete placement. Substrates must be regular and smooth, with no gaps or voids greater than 0.5 in. (12 mm). Grout around all penetrations such as utility conduits, etc. for stability.

Use concrete, plywood, insulation or other approved facing to sheet piling to provide support to the membrane. Board systems such as timber lagging must be close butted to provide support and not more than 0.5 in. (12 mm) out of alignment.

Membrane Application

Mechanically fasten the membrane vertically using fasteners appropriate for the substrate with the green zip strip facing towards the shotcrete placement. The membrane may be installed in any convenient length. Fastening can be made through the selvedge within 0.5 in. from the leading edge of the membrane using a small low profile head fastener so that the membrane lays flat and allows firmly rolled overlaps. Accurately position each succeeding sheet to overlap the previous sheet 3 in. (75 mm) along the marked selvedge with the blue zip strip on top of the green zip strip.

Ensure the underside of each succeeding sheet is clean, dry and free from contamination before attempting to overlap. Peel back and remove both the green and blue zip strips in the overlap area to achieve an adhesive to adhesive bond at the overlap. Roll firmly to ensure a watertight seal.

Roll ends and cut edges—Overlap all roll ends and cut edges by a minimum 3 in. (75 mm) and ensure the area is clean and free of contamination, wiping with a damp cloth if necessary. Allow to dry and apply PREPRUFE®Tape LT (or HC in hot climates) centered over the lap edges and roll firmly. Immediately remove tinted plastic release liner from the tape.

Membrane Repair

Inspect the membrane before installation of reinforcement steel, formwork and final placement of shotcrete. The membrane can be easily cleaned by low pressure power washing if required. Repair damage by wiping the area with a damp cloth to ensure the area is clean and free from dust, and other contaminants and allow the membrane to dry. Repair small punctures and slices (0.5 in. (12 mm) or less by applying PREPRUFE®Tape centered over the damaged area. Repair punctures and holes larger than 0.5 in. (12mm) by applying a patch of PREPRUFE® membrane. Extend the patch 6 in. (150 mm) beyond the damaged area. Seal all edges of the patch with PREPRUFE®Tape. Where exposed selvedge has lost adhesion or laps have not been sealed, ensure the area is clean and dry and cover with fresh PREPRUFE® Tape. Any areas of damaged adhesive should be covered with PREPRUFE®Tape. All PREPRUFE®Tape must be rolled firmly and the tinted release liner removed.

Slices or relief cuts can be butted or overlapped and repaired by applying PREPRUFE®Tape centered over the edge of the overlap or center of the butt joint. Where it is not possible to create a butt joint or overlap, repair with fresh membrane and PREPRUFE®Tape as detailed above.

Reinforcing Steel Anchors

Only compatible rebar supports such as concrete dobies shall be placed against the PREPRUFE®275 membrane. The steel should be tied to the shoring system using GCP approved anchors only. Contact your local GCP representative for additional information.

Shotcrete Placement

Important: Prior to shotcrete placement, ensure that the zip strip liner and any plastic release liner is completely removed from all areas of PREPRUFE®275 membrane and PREPRUFE®Tape.

Shotcrete should be placed within 56 days (42 days in hot climates) of application of the membrane. Shotcrete must be placed in accordance with ACI 506.2. Never use a sharp object to consolidate the shotcrete.

It is highly recommended that the PREPRUFE®275 membrane system be included in preconstruction test panels successfully meeting the project specifications. Only nozzle men with a test panel mean core grade less than or equal to 2.5 as described and defined in ACI 506.2 shall be allowed to place shotcrete against the PREPRUFE®275 membrane. Individual shotcrete cores greater than 3 are unacceptable.

Supply

DIMENSIONS (NOMINAL)	PREPRUFE® 275 MEMBRANE
Thickness	0.038 in. (0.95 mm)
Roll size	3 ft 10 in. x 120 ft (1.17 m x 36.6 m)
Roll weight	102 lbs (46 kg)
Note: when calculating coverage account for the Minimum side/end laps	3 in. (75 mm)

Ancillary Products

The most current supply information for ancillary products can be found at gcpat.com

Physical Properties (PREPRUFE® 275 MEMBRANE)

PROPERTY	TYPICAL VALUE	TEST METHOD
Color	white	
Thickness	0.038 in. (0.95 mm)	ASTM D3767
Lateral Water Migration Resistance	Pass at 180 ft (55 m) of hydrostatic head pressure	ASTM D5385 ¹
Low Temperature Flexibility	Unaffected at -20°F (-29°C)	ASTM D1970
Resistance to hydrostatic head	180 ft (55 m)	ASTM D5385 ²
Elongation	300%	ASTM D412 ³
Tensile strength, film	4000 psi (27.6 Mpa)	ASTM D412
Crack cycling at -9.4°F (-23°C), 100 cycles	Unaffected, Pass	ASTM C8364
Puncture resistance	135 lbs (600 N)	ASTM E154
Peel adhesion to concrete	4 lbs/in. (700 N/m)	ASTM D903 ⁵
Lap peel adhesion at 72°F (22°C)	7 lbs/in. (1225 N/m)	ASTM D1876 ⁶
Lap peel adhesion at 40°F (4°C)	7 lbs/in. (1225 N/m)	ASTM D1876 ⁶

Permeance to water vapor transmission

0.01 perms (0.6 ng/(Pa x s x m²))

ASTM E96, method B

Footnotes:

1. Lateral water migration resistance is tested by casting concrete against membrane with a hole and subjecting the membrane to hydrostatic head pressure with water. The test measures the resistance of lateral water migration between the concrete and the membrane.
2. Hydrostatic head tests of PREPRUFE[®] Membranes are performed by casting concrete against the membrane with a lap. Before the concrete cures, a 0.125 in. (3 mm) spacer is inserted perpendicular to membrane to create a gap. The cured block is placed in a chamber where water is introduced to the membrane surface up to the head indicated.
3. Elongation of membrane is run at a rate of 2 in. (50 mm) per minute at 72°F (22°C).
4. Concrete is cast against the PREPRUFE[®] membrane and allowed to cure (7-days minimum).
5. Concrete is cast against the PREPRUFE[®] membrane and allowed to cure (7-days minimum). Peel adhesion of membrane to concrete is measured at a rate of 2 in. (50 mm) per minute at 72°F (22°C).
6. The test is conducted 15 minutes after the lap is formed at evaluation temperature with rate of 2 in. (50 mm) per minute.

gcpat.com | North America customer service: 1-866-333-3SBM (3726)

We hope the information here will be helpful. It is based on data and knowledge considered to be true and accurate, and is offered for consideration, investigation and verification by the user, but we do not warrant the results to be obtained. Please read all statements, recommendations, and suggestions in conjunction with our conditions of sale, which apply to all goods supplied by us. No statement, recommendation, or suggestion is intended for any use that would infringe any patent, copyright, or other third party right.

ADCOR, PREPRUFE, PROCOR, and BITUTHENE are trademarks, which may be registered in the United States and/or other countries, of GCP Applied Technologies Inc. This trademark list has been compiled using available published information as of the publication date and may not accurately reflect current trademark ownership or status.

© Copyright 2018 GCP Applied Technologies Inc. All rights reserved.

GCP Applied Technologies Inc., 62 Whittemore Avenue, Cambridge, MA 02140 USA.

In Canada, GCP Canada, Inc., 294 Clements Road, West, Ajax, Ontario, Canada L1S 3C6

This document is only current as of the last updated date stated below and is valid only for use in the Canada. It is important that you always refer to the currently available information at the URL below to provide the most current product information at the time of use. Additional literature such as Contractor Manuals, Technical Bulletins, Detail Drawings and detailing recommendations and other relevant documents are also available on www.gcpat.com. Information found on other websites must not be relied upon, as they may not be up-to-date or applicable to the conditions in your location and we do not accept any responsibility for their content. If there are any conflicts or if you need more information, please contact GCP Customer Service.

Last Updated: 2020-07-09

ca.gcpat.com/solutions/products/preprufe-275-membrane